

# WILLIAM CROLL

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## SUMMARY

Highly-motivated high school junior with a passion for science and engineering enrolled at rigorous STEM magnet school, [Academy of Engineering & Technology](#). Seeking opportunities to augment curricular studies with real-world applications. Focus on aerospace technology and related disciplines.

## SKILLS

- AutoDesk Suite, Blender, OnShape
- Windows 11, MacOS, ChromeOS
- Google Suite
- Microsoft Office
- Computer systems
- Research
- Spacecraft Design
- Adobe Suite
- Arduino
- ArcGIS Suite
- Advanced Biology, Chemistry, Physics
- Design and fabrication
- Project management
- Presentation and public speaking
- Leadership
- Teamwork
- Strong work ethic
- Problem-solver
- Strategic thinker
- Highly organized
- Strong communication skills

## EDUCATION

**Academies of Loudoun, Academy of Engineering & Technology (expected graduation 2025)**

- 4-year advanced academic STEM program emphasizing integrated math, science, engineering, and technology curriculum. (Learn more [HERE](#))
- Engineering pathway with focus on engineering methods, fabrication techniques, programming, and projects in various fields of engineering including aerospace, civil, computer, mechanical, and electrical.

**Loudoun County High School (expected graduation 2025)**

- Advanced Studies Diploma with GPA of 4.44 (4.0 unweighted)
- Magna Cum Laude (top 10% of class)
- ACT Score of 35 (out of 36)

## WORK & RELATED EXPERIENCE

**NASA Goddard Space Flight Center (GSFC) (June – August 2024)**

*SPEID CubeSat Intern*

- Summer intern with GSFC engineering directorate developing a cubesat mission
- Chief Payload Engineer working with 11 other high school interns to develop mission and meet deliverable deadlines
- Met with technical mentors and subject matter experts to gain a greater understanding of engineering challenges

**The Smithsonian National Air & Space Museum (NASM) (October 2023 – Present)**

*Explainer*

- Paid Employee with NASM Explainers Program at The Steven F. Udvar-Hazy Center (Chantilly, VA)
- Explain NASA artifacts and scientific principles to museum guests including students, VIPs, and professionals
- Delivering lessons at several Discovery Stations including Living & Working in Space, Principles of Flight, and The Moon

**Virginia Space Grant Consortium (October 2022 – April 2024)**

*Virginia Aerospace Science and Technology Scholars (VASTS) Program*

- Completed online program with a grade of 95%, earning an invitation to summer academy at NASA Langley Research Center

*Virginia Space Coast Scholars (VSCS) Program*

- Completed online program with a grade of 97%, earning an invitation to summer academy at NASA Wallops Flight Facility
- Worked with other scholars and subject matter experts to plan a theoretical satellite mission
- Gained experience in the fields of aerospace sciences and collaborating with other scholars on an aerospace project
- Designed a spacecraft mission considering factors like mission goals, structure, science, compliance, safety, risk, and outreach

## RESEARCH HIGHLIGHTS

- Project Manager and Scientific Payload Specialist for NASA CubeSat Launch Initiative (CSLI) mission proposal – Academies of Loudoun Electrodynamic Tether Satellite (ACLETS) – Designed a CubeSat mission testing electrodynamic tethers as a form of space propulsion. As project manager, developed mission goals and guided the project team through the proposal draft process. As scientific payload specialist, designed scientific payload for the ACLETS mission. (September 2023 - November 2023)
- VSCS Satellite Design Research Scientist - Worked with other scholars to create a theoretical satellite mission to test power transmission from a spacecraft to Earth. Researched science behind the mission and defined mission objectives.
- VSCS and VASTS Technical Reports – Researched and analyzed information to formulate a satellite mission and Mars colony, involving design, personnel roles, budget, mission patch, instrument design, and mission timeline. (February 2023 – March 2023)
- High Altitude Scientific Balloon – Designed, assembled, and programmed sensors for gathering atmospheric data, then launched balloon carrying sensor payload and analyzed data after payload retrieval
- Robotics – Designed, fabricated, and programmed robot able to autonomously navigate a maze. (February 2022 – April 2022)

## COMMUNITY LEADERSHIP

### Ryan Bartel Foundation Teen Ambassador Program

*Teen Ambassador*, May 2024 – Present

- Suicide prevention program to enable teen mental health resilience training
- Volunteer at “FORT” events, communal safe spaces for all teens to socialize
- Attend “Sources Of Strength” mental health trainings to learn mental health strategies

### Nintendo Switch Club

*Founder & President*, (J. L. Simpson Middle School) January 2019 - March 2019

- Founded after-school gaming club
- Secured club sponsor, displays and consoles for meetings
- Recruited 35+ members and met weekly for friendly competitions

### Smashing Walnuts Foundation (Childhood Cancer Research)

*Volunteer*, October, 2013

- Provided logistics support for fundraising effort that raised \$275,000+ for Make-A-Wish Foundation (Mid-Atlantic)
- Notoriety from project led to President Obama signing legislation allocating \$126M to pediatric disease research

## INTERESTS & ACTIVITIES

- Tenor Saxophone in Loudoun County High School Concert and Jazz Band (2018 – present)
- Player in Central Loudoun Little League and Central Loudoun Basketball League (2015 – 2023)
- Video Games including “Satisfactory,” “Minecraft,” and “Kerbal Space Program,” which focus on design, creation and utilization of manufacturing, architecture, and spacecraft concepts
- Loudoun County High School “Imrovosaurus” Improv Comedy Troupe
- Weight Lifting and Climbing/Bouldering

## AWARDS & CERTIFICATIONS

- Virginia Technology Student Association Music Production 2nd Place at State Competition (May, 2024)
- National Technical Honor Society Member (Admitted April, 2024)
- National Honor Society Member (Admitted October, 2023)
- Outstanding AP Human Geography Student Award (June, 2023)
- First Aid, CPR, AED certified (February, 2022)
- Sources of Strength certified (evidence led youth suicide prevention program) (February, 2020)
- Honor Roll all quarters of middle and high school (2018 – present)